

CLAIMS

1. Electromagnetic braking device for molten steel flowing into a continuous casting mold (1), which comprises at least one magnet coil (2) with a ferromagnetic core (5) assigned to the broad sides (3, 4) of the mold, characterized by the fact that the core (5) consists, on the one hand, of a primary part (6) that houses the magnet coil (2), that can be moved by a drive unit (14) to within a certain distance of the broad-side walls (3, 4), and that is disconnected from the oscillation and, on the other hand, of additional parts (8, 8') that are permanently installed in water tanks (7, 7') of the mold (1), such that, when the parts of the core (6, 8) are brought together in their operating position, they form U-shaped yokes (9, 9') for generating a closed magnetic flux (10), and when they are moved apart, the magnetic flux is interrupted.

2. Braking device in accordance with Claim 1, characterized by the fact that the ferromagnetic additional parts (8, 8') installed in water tanks (7, 7') are assigned to the yokes (9, 9').

3. Braking device in accordance with Claim 1 or Claim 2, characterized by the fact that vertical recesses (11, 11') are formed in the broad-side walls (3, 4) on the lateral surfaces that face the water tanks (7, 7'), and ferromagnetic filler pieces (12, 12') are fitted into these recesses.

4. Braking device in accordance with one or more of Claims 1 to 3, characterized by the fact the primary part (6) of the core (5) with the magnet coil (2) can be moved in guides (13, 13') by means of a hydraulic actuator or electric drive (14) in the direction perpendicular to the broad-side walls (3, 4).

5. Braking device in accordance with one or more of Claims 1 to 4, characterized by the fact that the filler pieces (12, 12') are of variable length or width and/or depth.

6. Braking device in accordance with one or more of Claims 1 to 5, characterized by the fact that the movable partial core with its primary part (6) and the magnet coil (2), drive unit (14), and guides (13), on the one hand, and the additional core parts (8, 8'), which are permanently installed, especially by welding, in water tanks (7, 7') of the mold (1), on the other hand, do not form a fixed mechanical connection at their contact points (16, 16') but rather are held together by magnetic

forces.

7. Braking device in accordance with one or more of Claims 1 to 6, characterized by the fact that the contact points (16, 16') are designed as friction bearings or roller bearings (17, 17'), whose parts (18, 18') assigned to the water tanks (7, 7') are caused, together with the water tanks, to oscillate with the mold (1), while the parts assigned to the primary part (6) of the core (5) and the magnet coil (2), including the drive unit (14) and guides (13), are disconnected from the oscillation.

8. Braking device in accordance with one or more of Claims 1 to 7, characterized by the fact that the sliding friction of a friction bearing (17, 17') is at least mostly eliminated in the region of the contact points (16, 16') by an antifriction layer (18, 18'), especially an air cushion.

9. Braking device in accordance with Claim 8, characterized by the fact that the air cushion is maintained by introducing compressed air into the central region of the contact points (16, 16').